

We claim:

1. A surgical implant for replacing functions of a facet joint between adjacent vertebrae, the surgical implant comprising:

a first biocompatible attachment device for attaching to a first pedicle of a superior vertebrae;

a second biocompatible attachment device for attaching to a second pedicle of an inferior vertebrae; and

a flexible member attached to the first and second biocompatible attachment devices;

wherein the first and second biocompatible attachment devices are positioned, and the flexible member is adapted, so that the surgical implant applies a distracting force between the superior and inferior vertebrae sufficient for selectively maintaining the first and second pedicles at a predetermined distance.

2. The surgical implant of claim 1 wherein the flexible member is further adapted to be compressed in response to a second force that exceeds the distracting force.

3. The surgical implant of claim 1 wherein the flexible member includes a joint component positioned between the first and second biocompatible attachment devices.

4. The surgical implant of claim 3 wherein the flexible member further includes a first flexible member connected between the first biocompatible attachment device

and the joint component, and a second flexible member connected between the second biocompatible attachment device and the joint component, and wherein the first and second flexible members are connected together at the joint component and are adapted to rotate relative to each other at the joint component.

5. A facet replacement system comprising:

a first posterior device having first and second attachment mechanisms and a compression-resistant member connected there between;

a second posterior device having first and second attachment mechanisms and an expansion-resistant member connected there between;

the first attachment mechanisms being adapted to connect to respective portions of a superior spinous process; and

the second attachment mechanisms being adapted to connect to respective portions of an inferior spinous process.

6. The facet replacement system of claim 5 wherein the first attachment mechanisms connect to the same spinous process.

7. The facet replacement system of claim 5 wherein the second attachment mechanisms connect to the different spinous processes of a common vertebrae.

8. A prosthetic device for replacing functions of a facet joint between adjacent vertebrae, the prosthetic device comprising:

means for providing one or more flexible posterior devices to replace main functions of the facet joint; and

means for adapting a first one of the one or more posterior devices for a first attachment to a first transverse process, and a second attachment to a second transverse process.

9. The prosthetic device of claim 8 further comprising:

means for removing at least a portion of the facet joint.

10. The prosthetic device of claim 8 further comprising:

means for adapting a second one of the one or more posterior devices for attachments to articular processes.

11. The prosthetic device of claim 8 further comprising:

means for adapting a second one of the one or more posterior devices for attachments to spinous processes.

12. The prosthetic device of claim 8 further comprising:

means for adapting a second one of the one or more posterior devices for attachments to laminae.

13. A method for replacing functions of a facet joint between adjacent vertebrae, the method comprising:

providing one or more flexible posterior devices to replace main functions of the facet joint; and

adapting a first one of the one or more posterior devices for a first attachment to a first pedicle, and a second attachment to a second pedicle.

14. The method of claim 13 further comprising:
removing at least a portion of the facet joint.

15. The method of claim 13 further comprising:
adapting a second one of the one or more posterior devices for a third attachment to a first transverse process, and a fourth attachment to a second transverse process.

16. The method of claim 13 further comprising:
adapting a second one of the one or more posterior devices for a third attachment to a first articular process, and a fourth attachment to a second articular process.

17. The method of claim 13 further comprising:
adapting a second one of the one or more posterior devices for a third attachment to a first spinous process, and a fourth attachment to a second spinous process.

18. The method of claim 13 further comprising:
adapting a second one of the one or more posterior devices for a third attachment to a first lamina, and a fourth attachment to a second lamina.

19. The method of claim 13 further comprising:

supplying one or more anterior devices for a disc space between the adjacent vertebrae, so that the one or more anterior devices may assist the one or more posterior devices in replacing the functions of the facet joint.

20. A method for replacing functions of a facet joint between adjacent vertebrae, the method comprising:

providing one or more flexible posterior devices to replace main functions of the facet joint; and

adapting a first one of the one or more posterior devices for a first attachment to a first lamina, and a second attachment to a second lamina.

21. The method of claim 20 further comprising:

removing at least a portion of the facet joint.

22. A method for replacing functions of a facet joint between adjacent vertebrae, the method comprising:

attaching one or more posterior devices to the adjacent vertebrae to replace main functions of the facet joint without utilizing any anatomical facet joint implant.

23. The method of claim 22 further comprising:

removing at least a portion of the facet joint.

24. The method of claim 22 further comprising:
inserting at least one anterior device in a disc space between the adjacent vertebrae to assist the one or more posterior devices in replacing the functions of the facet joint.

25. The method of claim 22 wherein the attaching comprises attaching a first one of the one or more posterior devices to pedicles.

26. The method of claim 22 wherein the attaching comprises attaching a first one of the one or more posterior devices to articular processes.

27. The method of claim 22 wherein the attaching comprises attaching a first one of the one or more posterior devices to transverse processes.

28. The method of claim 22 wherein the attaching comprises attaching a first one of the one or more posterior devices to spinous processes.

29. The method of claim 22 wherein the attaching comprises attaching a first one of the one or more posterior devices to laminae.

30. A posterior device for replacing functions of a facet joint, the posterior device comprising:

a first component comprising:

an elongated body; and

a first joint having a first opening wherein the first opening contains an elastic material;

a second component comprising:

an elongated body; and

a second joint having a second opening wherein the second joint is coupled with the first joint, and the second opening contains the elastic material; and

a connector covering the first joint and the second joint wherein the connector comprises the elastic material.

31. The posterior device of claim 30 wherein the first component further comprises a pointed tip adapted for percutaneous insertion of the posterior device.

32. The posterior device of claim 30 wherein the second component further comprises a pointed tip adapted for percutaneous insertion of the posterior device.

33. The posterior device of claim 30 wherein the connector is olive-shaped.

34. The posterior device of claim 30 wherein the first component and the second component are coupled at an angle of approximately 45° to the horizon to simulate the orientation of the facet joint.

35. The posterior device of claim 30 wherein the first component and the second component are coupled at an angle of approximately 60° to an axial plane and 20° to an frontal plane of a human body.

36. The posterior device of claim 30 wherein the first component and the second component are coupled at an angle of approximately 90° to an axial plane and 45° to an frontal plane of a human body.

37. An anterior prosthetic device system for replacing functions of a facet joint between adjacent vertebrae, the anterior prosthetic device system comprising:

means for providing one or more flexible anterior devices to replace main functions of the facet joint; and
means for adapting a first one of the one or more anterior devices for insertion between adjacent vertebral bodies.

38. The anterior prosthetic device system of claim 37 further comprising:

means for removing at least a portion of the facet joint.

39. The anterior prosthetic device system of claim 37 further comprising:

means for adapting a second one of the one or more anterior devices for insertion between the adjacent vertebral bodies.